



Central Valley

Project

Improvement Act

Draft

Programmatic

Environmental

Impact

Statement

Technical

Appendix

VOLUME ONE

US Department of the Interior
Bureau of Reclamation
Sacramento, California

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(SEPTEMBER 1997)**

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**CENTRAL VALLEY PROJECT IMPROVEMENT ACT
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT**

DRAFT TECHNICAL APPENDIX

Development of the No-Action Alternative

September 1997

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|-------------|---|
| CEQ | Council on Environmental Quality |
| COA | Coordinated Operations Agreement |
| COE | U.S. Army Corps of Engineers |
| CVP | Central Valley Project |
| CVPLA | Central Valley Improvement Act |
| DFG | California Department of Fish and Game |
| DWR | California Department of Water Resources |
| FERC | Federal Energy Regulatory Commission |
| MW | mega watts |
| NMFS | National Marine Fisheries Service |
| OCAP | Operations Criterion and Plan |
| PEIS | Programmatic Environmental Impact Statement |
| Reclamation | U.S. Bureau of Reclamation |
| Service | U.S. Fish and Wildlife Service |
| SWP | State Water Project |
| SWRCB | State Water Resources Control Board |

CHAPTER 1

DEFINITION OF THE NO-ACTION ALTERNATIVE

Chapter I

DEFINITION OF THE NO-ACTION ALTERNATIVE

Public Law 102-575 was adopted on October 30, 1992. Title 34 of this law is the Central Valley Project Improvement Act (CVPIA). Section 3409 of the CVPIA requires the preparation of a Programmatic Environmental Impact Statement (PEIS).

The PEIS addresses existing conditions of the affected environment, projected conditions and impacts of the No-Action Alternative and other alternatives, and cumulative impacts. The conditions and impacts of the alternatives are projected over a 30-year study period from Year 1992 to Year 2022.

PURPOSE OF THIS REPORT

The purpose of this report is to summarize the procedures that were used to define the No-Action Alternative, and to describe the facilities and policies that are included in the No-Action Alternative.

DEFINITION OF THE NO-ACTION ALTERNATIVE

The Council on Environmental Quality (CEQ) has prepared guidelines for different ways to define the No-Action Alternative based on the type of action being considered. For a management action such as Title 34, the No-Action Alternative reflects "no change from current management direction or level of management intensity", and "continuing with the present course of action until that action is changed". The management direction could affect operation of the Central Valley Project (CVP) water facilities, repayment methods and pricing structures for water and power, water contract renewals, and compliance with federal and state water quality regulations.

The environmental impacts of the No-Action Alternative serve as a basis for comparison of other alternatives. The No-Action Alternative is based on projections of conditions that would occur if the alternatives were not implemented. The No-Action Alternative assumes continued management of the CVP facilities and continued implementation of the CVP policies as foreseen without implementation of CVPIA. The No-Action Alternative also includes reasonable and certain facilities that would be constructed by federal, state, and local agencies without implementation of the alternatives. The No-Action Alternative description in the PEIS focuses on projects or policies that would either be impacted by implementation of the alternatives.

METHODS TO IDENTIFY THE NO-ACTION ALTERNATIVE

Identification of the No-Action Alternative was based on the following steps:

- Identification of existing projects and management policies that were implemented on October 30, 1992;
- Identification of potential projects that have been considered for implementation by federal, state, and local agencies;
- Development and application of screening criteria for the No-Action Alternative to identify projects that would have been implemented without CVPIA; and
- Identification of changes to management policies that have been or would have been implemented after October 30, 1992 without CVPIA.

The process to identify projects and policies to be included in the No-Action Alternative is stringent to avoid unreasonable speculation or provide an implied project approval. The specific screening criteria for defining the No-Action Alternative are presented in Chapter II.

CHAPTER II

DESCRIPTION OF THE NO-ACTION ALTERNATIVE

Chapter II

DESCRIPTION OF THE NO-ACTION ALTERNATIVE

INTRODUCTION

Physical features of the CVP in place as of October 30, 1992, constitute the starting point for defining the No-Action Alternative. The U.S. Bureau of Reclamation (Reclamation) and the U.S. Fish and Wildlife Service (Service) had numerous projects and water management plans under consideration when CVPIA was enacted. The U.S. Army Corps of Engineers (COE), the California Department of Water Resources (DWR), and other agencies were also considering projects and management plans that could directly affect CVP operations or water management in the study area when the law was passed. It is likely that some of those projects and plans would have been implemented regardless of CVPIA.

The CVP facilities are operated in compliance with a variety of federal and state regulations and policies. Operation of the CVP system, as well as the viability of planned projects and actions, are affected by regulations and policies that would have been implemented regardless of CVPIA. The regulations and policies include actions adopted or initiated prior to October 30, 1992, and actions initiated after October 30, 1992, that could significantly impact operations of the CVP.

Operations procedures for the existing facilities are defined in the Long-Term CVP Operations Criteria and Plan (CVP-OCAP) and Reclamation's Mid-Pacific Region guidelines published prior to October 1992. Additional descriptions of operating criteria are discussed as policies in the No-Action Alternative, especially criteria related to power generation, contract renewals, water rates determination, acreage limitations, water conservation, flood control, and water quality.

FUTURE FACILITIES AND PROJECTS TO BE INCLUDED IN THE NO-ACTION ALTERNATIVE

The No-Action Alternative for the PEIS focuses on the physical features of the CVP system, other water projects in the PEIS study area that are operationally dependent upon the CVP, and federal and state policies that would have likely occurred without CVPIA. The No-Action Alternative provides the most reasonable projection of conditions that could occur without implementation of CVPIA. It should be recognized that the No-Action Alternative may or may not represent the ultimate build-out scenario, depending upon the issue area addressed. The No-Action Alternative assumes existing CVP facilities would continue to be used unless the existing management direction for the CVP includes removal or closure of a specific facility.

The criteria to be used in defining the No-Action Alternative was developed to identify those projects that have adequate support and commitment to have a high probability of occurring in the foreseeable future regardless of the enactment of CVPIA. Projects to be included in the No-Action Alternative must be consistent with all of the following criteria.

- Does the project have authorization for design without CVPIA?
- Does the project have funding for design without CVPIA?
- Does the project have final environmental documents?
- Does the project have final environmental permits and approvals?
- Does the project have initial authorization for construction without CVPIA?
- Does the project have initial funding for construction?

Items listed for action under the authorization of CVPIA are not included in the No-Action Alternative because the subject of the PEIS is authorization of projects listed in CVPIA.

The first screening criteria for the No-Action Alternative is related to authorization of design. Therefore, the list of identified projects was initially screened to eliminate all projects that did not have an adopted implementation plan and had not proceeded into the design phase. Projects that had proceeded into the design phase were considered further for inclusion into the No-Action Alternative. Brief descriptions of all projects and the results of the screening analysis are presented in Attachment A. The projects included in the No-Action Alternative are presented in Table II-1.

TABLE II-1

FUTURE FACILITIES INCLUDED IN THE NO-ACTION ALTERNATIVE

| Future Project and Owner | Status |
|---|---|
| Shasta Temperature Control Device (Reclamation) | Facility was constructed during preparation of PEIS |
| Coleman Fish Hatchery Improvements (Service) | Include only existing facilities as of January 1994 |
| Stone Lakes National Wildlife Refuges (Service) | Facility under construction during preparation of PEIS |
| Cache Creek Basin Improvements (Service) | Include only existing sedimentation basin |
| Clear Creek Improvements (Service) | Include existing improvements to McCormick-Saeltzer Dam Fish Ladder and to downstream riffles |
| Coastal Aqueduct (Department of Water Resources) | Facility under construction during preparation of PEIS |
| Red Bank-Fancher Creek Dams | Include only impoundment dams |
| Eastside Reservoir (Metropolitan Water District of Southern California) | Facility under construction during preparation of PEIS |
| Los Vaqueros Reservoir (Contra Costa Water District) | Facility under construction during preparation of PEIS |

POLICIES TO BE INCLUDED IN THE NO-ACTION ALTERNATIVE

The operational and regulatory policies to be included in the No-Action Alternative for operation of the CVP are presented in Table II-2.

TABLE II-2

**CVP CONTRACT AMOUNT AND DIVERSION OBLIGATION
ASSUMPTIONS USED IN THE PEIS ALTERNATIVES**

| Water Users | Existing Contract Amounts (1,000 acre-feet) | Amounts in Draft PEIS (1,000 acre-feet) |
|---|--|--|
| North of the Delta | | |
| CVP Agricultural Water Service Contractors | 570 | 480 |
| Sacramento River Water Rights Contractors | 1,940 | 1,870 |
| CVP Municipal/Industrial Water Service Contractors | 540 | 260 |
| Municipal/Industrial Water Rights Holders | 530 | 530 |
| Water Service Contractors and Water Rights Holders that use Stoney Creek | 4 | 4 |
| Water Service Contractors that use Sly Park and Sugar Pine Units | 26 | 26 |
| South of the Delta | | |
| CVP Agricultural Water Service Contractors | 1,980 | 1,980 |
| San Joaquin River Exchange Contractors | 880 | 880 |
| CVP Municipal/Industrial Water Service Contractors | 160 | 160 |
| Water served from the Stanislaus River | | |
| CVP Water Service Contractors with firm water supply | 49 | 49 |
| CVP Water Service Contractors with interim water supply | 106 | 106 |
| CVP Water Rights Holders served at Goodwin Dam | 600 | 600 |
| Other Riparian Water Rights Holders | 48 | 48 |
| Friant Division | | |
| Madera Canal Water Service Contractors | 490 | 490 |
| Buchanan and Hidden Unit Water Service Contractors | 50 | 50 |
| CVP Friant-Kern Canal Agricultural Water Service Contractors (includes Class I and Class II waters) | 1,720 | 1,720 |
| CVP Friant-Kern Canal Municipal/Industrial Water Service Contractors | 65 | 65 |
| NOTE: Refuge water supply contracts presented in Tables II-3, II-6, and II-7 | | |

The CVP facilities are operated in the No-Action Alternative as described in the Long-Term CVP-OCAP published by Reclamation in October 1992, the Friant Unit OCAP, and Reclamation's Mid-Pacific Region guidelines, as modified by the biological opinions and the Bay-Delta Planning Process. Due to the coordinated nature of operations of the CVP and the SWP, some policies apply to both the CVP and State Water Project (SWP), such as implementation of the Bay-Delta Plan.

Non-CVP facilities are operated in the No-Action Alternative in accordance with existing operational policies as defined by the SWP, COE for flood control, State Water Resources Control Board (SWRCB) for water rights diversions, and the Federal Energy Regulatory Commission (FERC) for operation of hydropower facilities.

In addition to assumptions summarized in Table II-2, the No-Action Alternative and many of the Draft PEIS alternatives included assumptions for several ongoing programs that have only recently been initiated. These programs are briefly described below and include implementation of the Bay-Delta Plan Accord, Coordinated Operations Agreement (COA), contract renewals and the CVP Conservation Program.

BAY-DELTA PLAN ACCORD

In December 1994, the Bay-Delta Plan Accord was signed. The Bay-Delta Plan Accord included an interim agreement that provided for the CVP and SWP to meet the water quality goals in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary until the SWRCB develops a subsequent water management plan. The CVP and SWP are operated under the Bay-Delta Plan Accord as defined in SWRCB Water Rights Order 95-01 and the May 1995 Draft Water Quality Control Plan.

The purpose of the Bay-Delta Plan Accord is to establish water quality control measures that contribute to the long-term protection of beneficial uses in the Bay-Delta Estuary, including objectives for salinity, water project operations, and dissolved oxygen.

The May 1995 Draft Water Quality Control Plan includes municipal and industrial water quality objectives for the reasonable protection of beneficial uses from salinity intrusion. These objectives are year-type based maximum chloride concentration standards for various compliance locations within the Delta.

Agricultural water quality objectives are included for the reasonable protection of beneficial uses from salinity intrusion and agricultural drainage in the western, interior, and southern Delta. These objectives are year-type based maximum salinity concentration standards at various compliance locations within the Delta.

The fish and wildlife water quality objectives are established for the following parameters: dissolved oxygen, salinity, Delta outflow, river flows, export limits, and Delta Cross Channel gate operation. Delta outflow objectives are for the protection of estuarine habitat for anadromous fishes and other estuarine-dependent species. Sacramento and San Joaquin river flow objectives

are to provide attraction and transport flows and suitable habitat for various life stages of aquatic organisms, including Delta smelt and chinook salmon.

Objectives for export limits are included to protect the habitat of estuarine-dependent species by reducing the entrainment of various life stages by the major export pumps in the southern Delta. An objective for closure of the Delta Cross Channel gates is included to reduce the diversion of aquatic organisms into the interior Delta where they are more vulnerable to entrainment by the major export pumps and local agricultural diversions.

COORDINATED OPERATIONS AGREEMENT

COA is the mechanism by which the CVP and SWP coordinate operations to meet Delta standards as defined by SWRCB Water Quality Control Plans. The existing COA was adopted in 1986 to implement standards defined by the SWRCB D-1485 standards which were adopted in 1978. The COA includes many provisions concerning the joint operations of the Delta including methods to ensure that water demands in specific areas north of the Delta and in the Delta are met prior to exporting water to areas south of the Delta. In addition, the provisions include formulas to define how much water the CVP and the SWP can export when the Delta conditions allow exports. As the Bay-Delta planning processes proceeds, portions of the CPA will need to be reinterpreted to incorporate new standards. However, for the purposes of the Draft PEIS, it is assumed that the agreements established by the COA would be similar to future agreements with changes incorporated to reflect Delta export operations.

The COA provides rules for the CVP and the SWP to store water in the Sacramento Valley and to export water from the Delta. The COA also defines responsibility for meeting Delta standards and provides a mechanism for defining the responsibility for actions not explicitly addressed in the COA, such as the National Marine Fisheries Service (NMFS) biological opinion for the winter-run chinook salmon and the Service biological opinion for Delta smelt.

CENTRAL VALLEY PROJECT FACILITIES OPERATIONAL CRITERIA

The Draft PEIS alternatives, as well as the No-Action Alternative, include the objectives of the 1993 Winter-Run Chinook Salmon Biological Opinion, except for a requirement to measure Delta reverse flows. The requirement was replaced with conditions contained in the 1995 Water Quality Control Plan. The biological opinion addresses Sacramento River temperature control objectives for several CVP operational conditions and Keswick Dam operations for maintenance of stable minimum flows. The biological opinion specifies that Reclamation maintain a minimum storage at the end of the water year (September 30) of 1.9 million acre-feet in Shasta Lake. This storage has been judged by NMFS and the California Department of Fish and Game (DFG) to be attainable in all but critical and extremely critical water year types. When CVP operations forecast that end-of-September storage levels in Shasta Lake may drop below 1.9 million acre-feet or temperature control objectives would not be met in the fall months, Reclamation would re-initiate consultation with NMFS prior to the first water allocation announcement. For the purposes of the Draft PEIS, it was assumed that the reconsultation would take place and that

CVP would institute all discretionary actions and meet all non-discretionary actions required of the CVP in the best method available.

Operations on the American River are affected by many requirements including flood control operations on Folsom Lake. By November 1 of each year, Reclamation must provide flood control space in Folsom Lake to allow for storage of a specified amount of stormwater runoff. Therefore, if storage at the end of October is projected to be higher than the criteria, water is released in a controlled manner in the late summer and early fall months. Currently, several studies are being completed to modify the criteria that are used to determine the flood control space. Because these studies have not been completed at this time, an interim agreement which defines provisions for 400,000 acre-feet of flood control space was used in the Draft PEIS. It is recognized that an alternative that considers a variable amount of flood control space has been used on a pilot basis. During the development of the Draft PEIS, a sensitivity analysis was completed. The results of the analysis indicated that, for long-term planning purposes addressed by the PEIS, the methodology would not change CVP operations significantly. In addition to flood control, operation of the lower American River is conducted to maintain flows below Nimbus Dam in accordance with a historical operational practice known as "modified D-1400".

Historically, Reclamation has had difficulty meeting all of the operational obligations on New Melones Reservoir. This difficulty became apparent during the drought conditions of 1987-1992 when New Melones Reservoir was drawn down to approximately 80,000 acre-feet in 1992 and near zero releases were made to the Stanislaus River during the summer months. During the drought period, many Stanislaus River stakeholder meetings were convened to coordinate operational objectives to manage the limited water supplies available. Consequently, long-term operational criteria for New Melones Reservoir have not been established. The interim drought management actions implemented during the 1987-1992 drought period do not constitute a long-term operational approach, and therefore could not be anticipated to represent operational conditions in the year 2022.

The operations of New Melones Reservoir in the No-Action Alternative were developed based upon the operational priorities established in the SWRCB D-1422 and subsequent agreements. D-1422 requires that existing diversion water rights, instream flow, and water quality obligations be met as a condition of the operations of New Melones Reservoir. In addition, Reclamation would operate New Melones Reservoir to provide additional releases, as available, to help meet the pulse flow requirements of the Bay-Delta Plan. After these obligations had been met in a given water year, Reclamation would make water available for delivery to CVP contractors. During periods of consecutive dry or critically dry years, storage levels in New Melones Reservoir generally decrease from year to year. Under the operational criteria developed for the No-Action Alternative, in years when the total available supply (projected inflow plus projected end-of-year storage) is below specified levels, annual quantities of water allocated for Vernalis water quality and Bay-Delta pulse flow are limited. As a result, water quality conditions may not be maintained at levels required by D-1422 in all months during dry and critically dry years. This approach is based, in part, on the drought management actions implemented during the 1987-1992 drought period.

CONTRACT RENEWALS

CVP contracts were scheduled for renewal prior to the adoption of the CVPIA. However, due to the passage of CVPIA, only interim contract renewals have occurred. The contract renewal process will include a needs analysis to determine beneficial use of the CVP water and a site-specific assessment to determine potential impacts of using CVP water on special-status species. During the preparation of the PEIS, it was not possible to complete the needs analyses for definition of the contract renewal conditions. Therefore, contracts were assumed to be renewed under the No-Action Alternative at levels not to exceed the existing contract amounts. To estimate the results of the needs analysis and the biological assessments, contract amounts initially were assumed to be equal to the maximum historic use in a year during the period of 1980 through 1993, a period in which historic delivery amounts were readily available for all water users.

Many users, especially municipal users, had not fully utilized their contract amounts during this period. Future projections of deliveries could not be included in the No-Action Alternative unless these projections had undergone public review of potential environmental impacts. Therefore, if maximum historic water use between 1980 and 1993 was less than the contract amount, the maximum deliveries for the No-Action Alternative were only increased to a level for which environmental documentation and public review had been completed for both use of the water and conveyance of the water from the CVP system.

These assumptions were for use in the Draft PEIS only. Reclamation intends to deliver the full CVP water contract amount consistent with hydrologic conditions and regulatory and environmental requirements. The specific allocations under a CVP water service contract in the Draft PEIS would not inhibit in any way the contractors' ability to develop projects to take delivery of full contract amounts prior to contract renewal.

The Draft PEIS provides an indication of the amount of water available for contracting under different operational and hydrological conditions. All decisions concerning individual CVP contract renewal amounts would not be based upon the findings of the PEIS, but rather upon project-specific contract renewal environmental documentation. In those documents, all contractors would be considered equally within their appropriate type of contract.

The Draft PEIS analysis also assumes the normal monthly operations of the Central Valley water resources facilities over the historic hydrological period of 1922 through 1991 for use in the hydrologic model simulations. Emergency operations of individual facilities, such as might occur after a major contaminant spill in the Delta or a levee failure, or the incidents of peak hourly flow conditions were not considered in the Draft PEIS. Therefore, annual contract deliveries may vary from patterns evaluated in the Draft PEIS.

The delivery amounts from the CVP and other users include deliveries to the refuges discussed in the 1984 Refuge Water Supply Study and the San Joaquin Basin Action Plan. The values include historically recognized conveyance losses.

CENTRAL VALLEY PROJECT CONSERVATION PROGRAM

Reclamation and the Service are implementing the CVP Conservation Program (Conservation Program), a long-term management program to address the biological needs of special-status species in the areas affected by the CVP. The special-status species include primarily federally listed species; in addition, species that are candidates or are proposed species for federal listing as well as other species of concern may benefit from the Conservation Program if they have high-priority biological needs. The Conservation Program will implement an aggressive, adaptive management program to protect, restore, and enhance these species and the ecosystems that support them throughout the Central Valley of California and other areas where CVP water is delivered. Reclamation and the Service expect the long-term implementation of the Conservation Program to be accomplished through partnerships with other programs that can contribute to and share goals of the Conservation Program. Considerable public involvement in refining, developing, and implementing the program is envisioned. The objectives of the Conservation Program are listed below.

- Address the needs of special status species
- Assist in the conservation of biological diversity
- Improve overall conditions for these species

Meeting these objectives would enhance the overall quantity and quality of habitat and populations of special-status species throughout the Central Valley and help ensure that current and future operations of the CVP will not jeopardize the existence of any species.

Initially, the Conservation Program will address the high-priority needs of special-status species identified during recent consultations under Section 7 of the Endangered Species Act for CVP contract renewals. The initial list includes actions presented in Attachment H of the PEIS, such as the establishment of additional wild populations of the riparian bush rabbit in the San Joaquin Valley by protection of habitat; increasing areas of flood refuges; establishing a working fire management plan; and management of wetland, riparian, and grassland mosaic ecosystem habitats. A preliminary list of species and actions is included in Attachment H of the PEIS; it will be modified as new scientific information becomes available, specific actions are completed, and the public has an opportunity to provide input.

The Conservation Program will benefit special-status species in the areas affected by the CVP through the following actions.

- Addressing the biological needs of priority special-status species through land acquisition, management, restoration, and monitoring
- Conducting studies to determine critical life requisites, habitat needs, and other relevant information (such as minimum viable population analysis)